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Public Health

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September 27, 2018

TO: Each Supervisor

FROM: Barbara Ferrer, Ph.D., M.P.H., M.Ed.
Director

SUBJECT: **UPDATE ON PROGRESS TO ABATE ELEVATED HEXAVALENT CHROMIUM LEVELS IN THE CITY OF PARAMOUNT**

On December 20, 2016, your Board instructed the Department of Public Health (DPH) to report back on the progress to abate the endangerment posed by elevated hexavalent chromium ("Chromium-6") emissions in the City of Paramount. DPH has reported to your Board on this issue since January 2017, with the last quarterly report dated July 6, 2018. This quarterly report provides information on four key elements of the interagency response: air quality monitoring, enforcement, public communication, and rulemaking activity.

## Air Quality Monitoring

Generally, levels of Chromium-6 have remained low over the last quarter. There was a slight increase observed during the month of July, possibly due to a seasonal increase in production during the summer months. DPH will continue to monitor air levels closely and confer with South Coast Air Quality Monitoring District (SCAQMD) if this increase persists (Attachment 1). The monthly average Chromium-6 concentrations ranged from 0.53 to 0.65 nanograms per meter cubed ($ng/m^3$) for industrial areas, 0.46 to 1.20 $ng/m^3$ for residential areas, and 0.46 to 0.61 $ng/m^3$ for the school location (see Attachment 1). Levels in the school location, industrial, and residential areas are slightly above the significant long-term health risk level of 0.2 $ng/m^3$. Levels across Paramount have generally decreased since last year, but remain higher than ambient levels in other areas of the region (0.04-0.1 $ng/m^3$). It is expected that levels will decrease further with full implementation of SCAQMD applicable rules (see Rulemaking Activity section).

### *Status of SCAQMD Air Monitoring Network*

The SCAQMD has reduced their air monitoring network from 16 to 11 monitors due to the general decrease of Chromium-6 levels in Paramount, and their need to relocate monitors to other areas that may be subject to air toxic exposure. As a result, there is currently one monitor left for the school location. Please see Attachment 2 for the Updated Air Monitoring Plan for the City of Paramount.

**Area Schools**
Last June, the Paramount Unified School District (PUSD) agreed to DPH serving in an oversight capacity for air testing inside PUSD classrooms to be conducted by a PUSD contractor at the beginning of the school year. A Memorandum of Understanding to formalize this agreement was drafted, reviewed by counsel from both parties, and is in the process of being signed. Additionally, school testing has been programmed for September 26 and 27, 2018. Staff from the DPH Toxicology and Environmental Assessment Branch plan to be present to oversee the testing process and provide technical assistance as needed.

**Enforcement**
Currently, SCAQMD has Orders of Abatement in place pertaining to air emissions for three facilities: Anaplex, Aerocraft, and LubeCo. These Orders of Abatement expire on December 31, 2018 (Anaplex and Aerocraft), and on 12/1/18 (LubeCo.). There is also an Order pertaining to odors for Carlton Forge Works, which is expiring on December 31, 2018. Two orders to temporarily suspend operations were given to Anaplex Corporation by the SCAQMD during the last quarter due to elevated ambient Chromium-6 levels at a monitor just downwind of Anaplex. The orders were given on June 27 and August 9, 2018.

**Public Communication**
DPH continues to provide information and health education material to Paramount residents by email, phone, in-person meetings, and through online resources. Online resources include a frequently asked questions document that is updated periodically to reflect current issues, relevant directives and orders, and information on air monitoring efforts.

**Rulemaking Activity**
SCAQMD Rule 1430 aims to reduce particulate matter emissions, in addition to odors, from metal grinding and cutting operations at metal forging facilities. The Rule incorporates point of emission controls, HEPA filtration, total enclosures with negative air, and housekeeping measures. The Rule also requires periodic and continuous testing of controls, installation of signage with contact information for the facility and SCAQMD visible to the public, and recordkeeping for housekeeping, monitoring, maintenance, and air quality complaints. Of the four metal forging facilities in the City of Paramount, all four require and have installed total enclosures. All four have also submitted grinding and control equipment applications. Three (Press Forge, Carlton Forge Works, and Mattco Forge, Inc.) have received control equipment construction permits with a six-month completion timeline. One (Weber Metals) is pending City approval of its control equipment construction permit.

SCAQMD is in the process of updating its Rule 1469 to include requirements for hexavalent chromium-containing tanks in electroplating or chromic acid anodizing operations. These requirements include building enclosures, enhanced housekeeping and best management practices, periodic source testing, and permanent total enclosures for facility areas where chromium-containing tanks are located. A public hearing on the updated Rule was held on September 7, 2018.

SCAQMD Proposed Rule 1480 plans to expand monitoring for metal emission sources and approach monitoring of toxic metals in a more inclusive manner instead of rule-by-rule or with legal orders. DPH staff have prepared a set of recommendations for SCAQMD Proposed Rule 1480 – Air Toxic Metals Monitoring related to the dissemination of test results to the community.

The California Air Resources Board (CARB) has announced that it will be amending its Hexavalent Chromium Airborne Toxic Control Measure for Chrome Plating and Chromic Acid Anodizing Operations (Chrome Plating ATCM) in order to minimize community exposure to hexavalent chromium and other compounds used in plating operations. DPH is engaged in discussions with CARB to provide input on the development of this amendment to ensure community health is protected to the maximum extent possible. Suggestions include, but are not limited to, the use of less toxic trivalent chromium, engineering control measures, and possible alternatives to chemical fume suppressants.

DPH will continue to work closely with SCAQMD, CARB, the Fire Department, and County Counsel to report quarterly on progress to abate hexavalent chromium levels and protect the public's health in the City of Paramount.

If you have questions or need additional information, please let me know.

BF:ab

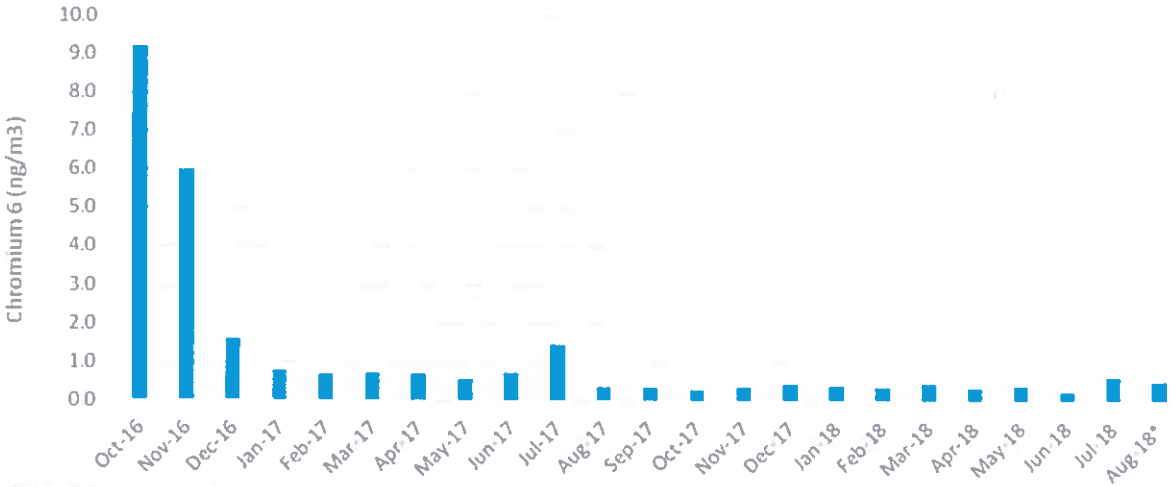
Attachments

c: Chief Executive Officer
County Counsel
Executive Officer, Board of Supervisors

**ATTACHMENT 1**

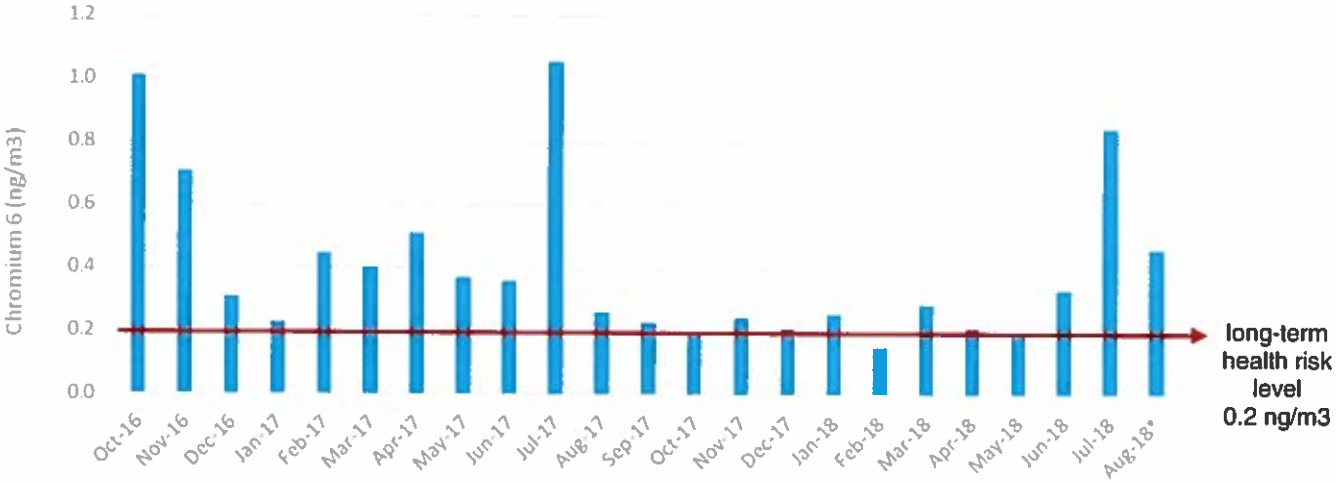
**Chromium-6 Graphs for Industrial and Residential Areas in Paramount**

Figure 1. Chromium 6 in Outdoor Air (ng/m$^3$)
Near Industrial Facilities in Paramount




* Partial data is available for August, 2018 as of the date of this report

Figure 2. Chromium 6 in Outdoor Air (ng/m$^3$)
Near Residential Areas and School Areas in Paramount




* Partial data is available for August, 2018 as of the date of this report.
Frequency of measurements for residential areas was reduced from every 3 days to every 6 days as of May 29, 2018.

# Updated Air Monitoring Plan for the City of Paramount

The South Coast Air Quality Management District (SCAQMD) has been collecting air samples for toxic metals analysis in the City of Paramount since 2013. This investigation focused on two toxic metals of concern: nickel and hexavalent chromium (Cr6+). In July 2016, a larger number of samplers were deployed to allow the SCAQMD to better measure spatial and temporal variations of Cr6+ in the area and identify its potential sources. Once potential sources were identified, the sampling strategy was adjusted to focus on specific facilities and on characterizing Cr6+ levels in the adjacent communities. As a result, several facilities made a range of improvements, some voluntary and some through rule changes and enforcement actions. These changes have substantially reduced ambient Cr6+ levels in the City of Paramount (Paramount) area.

Throughout this period, air monitoring in Paramount has occurred at a total of 38 locations (Figure 1) and 12 schools. School sampling has been supported by the California Air Resources Board. Currently, the SCAQMD collects air samples for Cr6+ analysis at 16 locations in the City of Paramount. Among these active monitoring locations, six are adjacent to facilities that are currently under an Order of Abatement with the SCAQMD's independent Hearing Board ("Compliance" sites; see white circles in Figure 1). The remaining monitoring sites are close to other potential sources or near residential areas and sensitive receptors of the City ("Area Wide" sites; see blue circles in Figure 1).

Table 1 provides summary statistics of Cr6+ concentrations measured at each currently-active sites since the beginning of this study as well as the facilities being monitored to ensure compliance with an Order of Abatement. Figures 2 and 3 illustrate the monthly average Cr6+ levels at "Compliance" and "Area Wide" sites, respectively, since the beginning of this study. It is evident that ambient Cr6+ concentrations at all locations have declined substantially over time, and monthly average Cr6+ levels at all currently-active sites have been consistently near or below 1ng/m$^3$ during the past nine months.

Because Cr6+ levels in the City of Paramount have been declining steadily and are now within the typical levels, the size of this monitoring network can be reduced to focus on other areas that have higher potential for air toxics exposure. Considering the large number of samples that have been collected and analyzed at each monitoring location (see column "N" in Table 1) and the consistently low Cr6+ levels measured over the past nine months (Figures 2 and 3), staff recommends to modify the sampling strategy as described below and summarized in Table 2:

- Continue monitoring at "Compliance" sites #8, #11, #14, #15 and at "Area Wide" site #16 with a 1-in-3 day sampling frequency until the Order of Abatement for the facilities closest to these sites (i.e., Anaplex and Aerocraft) has been lifted. To ensure that Cr6+ levels remain low after the Order of Abatement has been lifted, continue monitoring at the aforementioned sites with a 1-in-6 day sampling frequency for a few weeks before removing the samplers.

- Continue monitoring at "Compliance" sites #29 and #38 with a 1-in-3 day sampling frequency until the Order of Abatement for the facility closest to these sites (i.e., LubeCo) has been lifted. To ensure that Cr6+ levels remain low after the Order of Abatement has been lifted, continue monitoring at the aforementioned sites with a 1-in-6 day sampling frequency for a few weeks before removing the samplers.

- Remove "Area Wide" samplers #24, #27, #28, #31, and #37 in May, 2018.

- Decrease the sampling frequency of the remaining "Area Wide" sites (#2, #19, #23, and #25) from 1-in-3 day to 1-in-6 day until the City of Paramount has a strategy/contract in place for their monitoring effort.

The updated plan will help maintain a comprehensive, efficient, and cost-effective monitoring effort and meet the increasing demand for more extensive metal monitoring as part of CATI. It should be noted that the City of Paramount owns three time-integrated filter samplers (i.e., two BGI PQ100 and one BGI OMNI) that have been used by the SCAQMD's staff to collect filter samples as part of this monitoring effort. SCAQMD's staff will work with the City of Paramount to provide them with guidance on where to locate their samplers and a list of certified contractors and laboratories to collect and analyze samples for Cr6+. The SCAQMD will perform sampling at selected locations within the community as needed, and as the result of inspection activities or other unexpected events that may arise in the area.

**Figure 1. Location of the monitoring sites in the City of Paramount.**

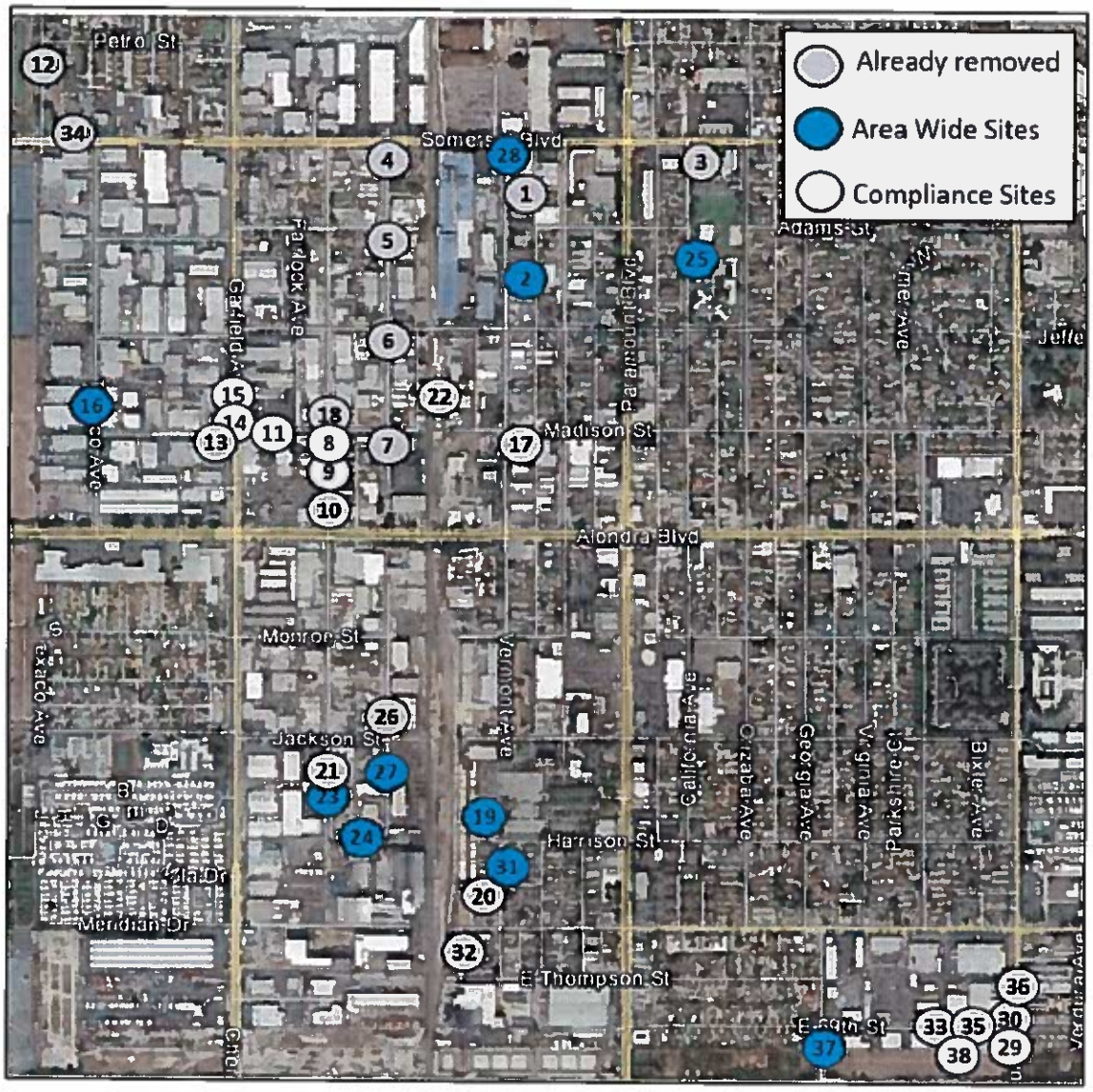


**Figure 2. Monthly average levels of hexavalent chromium (Cr6+) at Compliance sites.**
***Compliance sites target the facilities that are currently under an Order of Abatement with the SCAQMD's independent Hearing Board.***

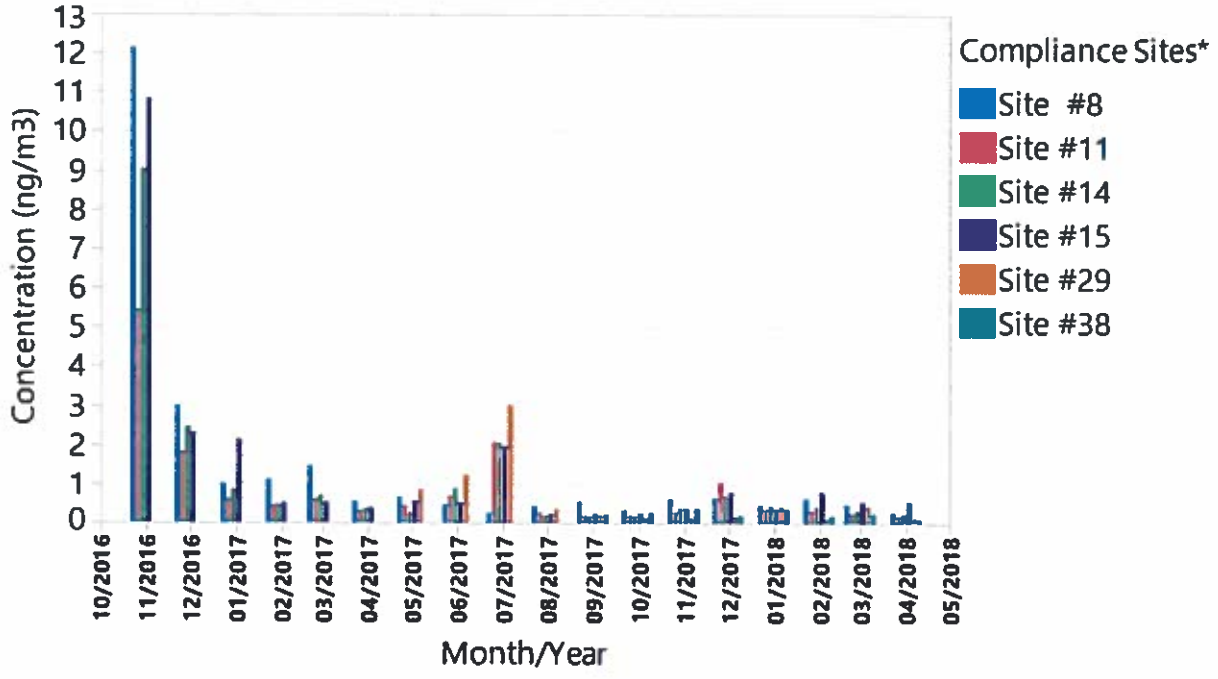



**Figure 3. Monthly average levels of hexavalent chromium (Cr6+) at Area Wide sites.**

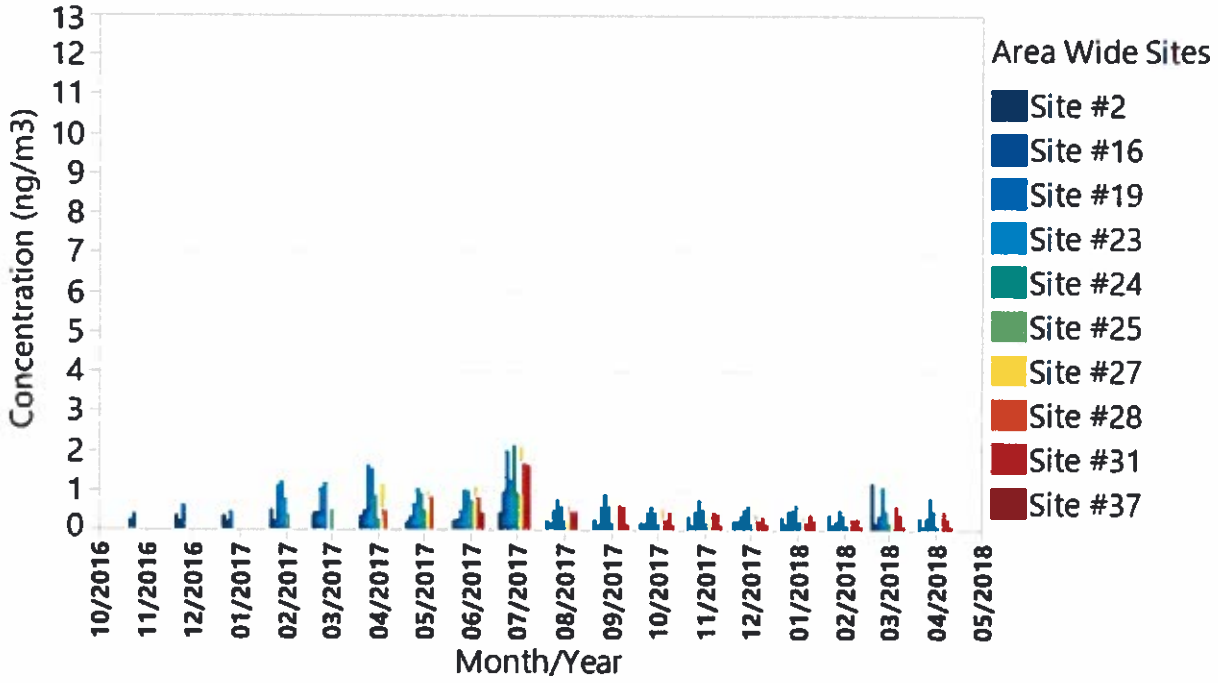


**Table 1. Summary statistics of hexavalent chromium (Cr6+) concentrations at currently-active monitoring sites in the City of Paramount since the beginning of the study. The total number of samples that have been collected and analyzed at each monitoring location is reported in column "N".**

| | Site | N | Min (ng/m3) | Max (ng/m3) | Average (ng/m3) | Median (ng/m3) | Target Facility |
|---|---|---|---|---|---|---|---|
| Compliance Sites | Site #8 | 179 | 0.02 | 26 | 1.61 | 0.40 | Aerocraft |
| | Site #11 | 168 | 0.05 | 17 | 0.92 | 0.29 | Anaplex |
| | Site #14 | 170 | 0.05 | 18 | 1.05 | 0.28 | Anaplex |
| | Site #15 | 174 | 0.05 | 26 | 1.25 | 0.35 | Anaplex |
| | Site #29 | 110 | 0.05 | 15.4 | 0.61 | 0.20 | LubeCo |
| | Site #38 | 72 | 0.05 | 1.30 | 0.26 | 0.17 | LubeCo |
| Area Wide Sites | Site #2 | 176 | 0.02 | 4.07 | 0.36 | 0.27 | |
| | Site #16 | 164 | 0.03 | 3.26 | 0.27 | 0.15 | |
| | Site #19 | 156 | 0.02 | 5.19 | 0.69 | 0.42 | |
| | Site #23 | 141 | 0.01 | 3.38 | 0.89 | 0.72 | |
| | Site #24 | 124 | 0.07 | 7.69 | 0.73 | 0.61 | |
| | Site #25 | 137 | 0.03 | 4.27 | 0.34 | 0.20 | |
| | Site #27 | 120 | 0.04 | 7.66 | 0.70 | 0.40 | |
| | Site #28 | 116 | 0.04 | 7.40 | 0.57 | 0.33 | |
| | Site #31 | 98 | 0.04 | 3.71 | 0.51 | 0.39 | |
| | Site #37 | 69 | 0.04 | 0.59 | 0.13 | 0.11 | |

**Table 2. Summary of the recommended actions for the currently-active monitoring sites in Paramount.**

| Site | Recommended action | Recommended sampling frequency |
|---|---|---|
| #2 | Continue Sampling* | 1-in-6 day |
| #8 | Continue Sampling# | 1-in-3 day |
| #11 | Continue Sampling# | 1-in-3 day |
| #14 | Continue Sampling# | 1-in-3 day |
| #15 | Continue Sampling# | 1-in-3 day |
| #16 | Continue Sampling# | 1-in-3 day |
| #19 | Continue Sampling* | 1-in-6 day |
| #23 | Continue Sampling* | 1-in-6 day |
| #24 | Remove | - |
| #25 | Continue Sampling* | 1-in-6 day |
| #27 | Remove | - |
| #28 | Remove | - |
| #29 | Continue Sampling# | 1-in-3 day |
| #31 | Remove | - |
| #37 | Remove | - |
| #38 | Continue Sampling# | 1-in-3 day |

***Sampling will continue at the specified frequency until the City of Paramount has a strategy/contract in place for their monitoring effort***

***Sampling will continue at the specified frequency until the Orders of Abatement for the facilities closest to these sites have been lifted. Then the monitoring will continue with a 1-in-6 day sampling frequency for a few weeks to ensure that Cr6+ levels remain low after the Orders of Abatement have been lifted.***